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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,254	03/18/2004	Guy V. Clatterbaugh	1921-2645	5982
26085	7590	09/06/2007		
THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORA OFFICE OF PATENT COUNSEL 11100 JOHNS HOPKINS ROAD MAIL STOP 7-156 LAUREL, MD 20723-6099			EXAMINER CHAO, ELMER M	
			ART UNIT 3737	PAPER NUMBER
			MAIL DATE 09/06/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/803,254

Applicant(s)

CLATTERBAUGH ET AL.

Examiner

Elmer Chao

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 28-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 28-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/9/2004.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-14 and 28-41 in the reply filed on 5/10/2007 is acknowledged.

Drawings

2. The drawings were received on 7/8/2004. These drawings are unacceptable.
3. The drawings are objected to because Figures 6 and 7 are missing from the Replacement Drawing sheets filed 7/8/2004. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claim 1, 5, 7, 28, 32, and 34** are rejected under 35 U.S.C. 102(e) as being anticipated by Grabek et al. (U.S. 2004/0111022 A1). Grabek et al. teach a radio frequency coil adapted to be extended from a catheter (Para [0009]), said coil comprising a flexible printed wiring board comprising: a first end of said flexible printed wiring board (Fig. 9, Item 14) extending from an opening in said catheter (Fig. 9, bottom half of loop); a second end of said flexible printed wiring board extending from said opening in said catheter (Fig. 9, top half of loop); a connection external to said catheter joining said first end to said second end to form a loop (Fig. 9, the connection point between the top and bottom half of the loop); said coil further comprising insulator sections on said flexible printed wiring board, wherein said insulator sections define the shape of said loop (Para [0032]); and said coil further comprising control rods connected to said first end and said second end, wherein said control rods are independently moveable (Fig. 9, lower and upper arrows).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 2, 3, 4, 29, 30, and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Grabek et al. in view of Nesteruk et al. (U.S. 6,950,063) and Reynolds et al. (U.S. 2003/0069521).

Regarding **claims 2 and 29**, Grabek et al. teach the limitations as discussed above but fail to explicitly teach the flexible printed wiring board having a flat ribbon shape. However, Nesteruk et al. teach a MRI probe with a conductor that is flat in shape (col. 3, lines 18-37). Therefore it would have been obvious to a person of ordinary skill in the art to modify Grabek et al.'s invention to include a flat ribbon shaped loop as a matter of design choice as flat conductors are well-known in the art as one of a number of possible shapes for intraluminal probes (col. 3, lines 18-30). Furthermore, Reynolds et al. teach coils formed of round or flat ribbon in order to achieve a desired flexibility (Para [0071]).

Regarding **claims 3, 4, 30, and 31**, Grabek et al. teach the limitations as discussed above but fail to explicitly teach the relative flexibility of the first and second ends. However, Reynolds et al. teach coils formed of round or flat ribbon in order to achieve a desired flexibility (Para [0071]). Furthermore, Grabek et al. teach that the flexibility of the coil would allow the coil to form when pushed out of the opening of the

catheter (Figs. 8 & 9). Therefore it would have been obvious to a person of ordinary skill in the art to modify Grabek et al.'s invention to include using a first end more flexible than the second end as it is functionally equivalent to Grabek et al.'s invention of creating an arc to form a loop.

8. **Claims 6 and 33** is rejected under 35 U.S.C. 103(a) as being unpatentable over Grabek et al. in view of Watkins et al. (U.S. 6,175,757). Grabek et al. teach the limitations as discussed above but fail to explicitly teach the flexible printed wiring board including capacitors adjacent said second end. However, Watkins et al. teach adding capacitors to a receive coil (col. 5, lines 16-21). Therefore, it would have been obvious to a person of ordinary skill in the art to modify Grabek et al.'s invention to include capacitors adjacent said second end in order to provide a more sensitive receptor to MR signals (col. 5, lines 16-21).

9. **Claims 8-14 and 35-41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Grabek et al. in view of Nesteruk et al. and Reynolds et al., further in view of Watkins et al., further in view of Atalar et al. (U.S. 5,699,801). Grabek et al., Nesteruk et al., Reynolds et al., and Watkins et al. teach the limitations as discussed above but fail to explicitly teach a Faraday shield on the flexible printed wiring board. However, in the same field of endeavor, Atalar et al. teach a catheter receiver coil with a faraday shield (col. 16, lines 1-3). Therefore, it would have been obvious to a person of ordinary skill in the art to include using a Faraday shield on said flexible printed wiring board in order to enhance efficiency (col. 15, lines 66-67).

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Conclusion

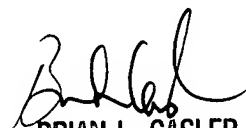
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elmer Chao whose telephone number is (571)272-0674.

The examiner can normally be reached on 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EC
7/28/2007


BRIAN L. CASLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700